# Navigating ESG Storms: ESG Incidents and Earnings-based Incentives in CEO Compensation*

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## ABSTRACT

We investigate whether firms adjust earnings-based incentives in CEO compensation after influential media expose their involvement in environmental, social, and governance (ESG) incidents. We capture earnings-based incentives using the target payout linked to earnings and the value-adjusted weight of earnings metrics in CEO compensation. We find that firms involved in ESG incidents significantly reduce earnings-based incentives in CEO compensation. These firms replace earnings-based incentives with nonfinancial and ESG performance-based incentives in CEO compensation. When categorizing firms into consumer-sensitive versus less consumer-sensitive industries, we find that less consumer-sensitive businesses choose to reduce the importance of earnings in CEO compensation following ESG incidents. Finally, we show that these adjustments to performance incentives are received favorably by the market and lower the risk of future ESG incidents. Overall, our results suggest that firms' efforts to focus CEOs' attention on ESG goals in the wake of ESG incidents improve the efficiency of CEO contracting.

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## 1. Introduction

The corporate world is rife with environmental, social, and governance (ESG) initiatives (Christensen et al., 2021; Edmans, 2023). In 2019, for example, the World Economic Forum published principles for how to establish effective climate governance on corporate boards, underscoring the strategic importance of embedding a firm's ESG strategy into its overall governance framework.[1] Firms swiftly responded. By 2021, approximately 75% of S&P 500 firms had incorporated ESG targets into their CEO compensation, up from 66% in 2020 (Peregrine, 2022). However, greater attention to ESG has brought greater concern about greenwashing (Li and Wu, 2020; RepRisk, 2023), since anecdotes suggest that merely incorporating ESG-related metrics into CEO compensation does not support ESG initiatives. For example, in 2021, legal action was initiated against Chevron for alleged environmental damage in the Amazon rainforest, despite major incentives in the CEO's compensation plan based on health, environmental, and safety performance. Likewise, Johnson & Johnson has been sued repeatedly related to allegations that its talc-based products can cause cancer, even though the firm emphasizes product quality and safety as critical factors affecting its performance (Hsu, 2023). In this study, we analyze how CEO compensation design, especially the relative importance of performance-based incentives, changes with a firm's ESG performance over time.

Specifically, we focus on earnings-based incentives and investigate whether firms adjust their importance in CEO compensation following ESG incidents. We focus on earnings-based incentives because they are ubiquitous (Bushman and Smith, 2001; Carter et al., 2022; De Angelis and Grinstein, 2015).[2] Furthermore, research has highlighted potential conflicts

[1] Of the eight principles, Principle 6 focuses on designing incentives for executives to promote firms' long-term prosperity. The full report is available at https://www.weforum.org/whitepapers/how-to-set-up-effective-climate-governance-on-corporate-boards-guiding-principles-and-questions/.

[2] De Angelis and Grinstein (2015) find that 79% of performance-based incentives are attached to accounting metrics among S&P 500 firms, more than 70% of which are earnings-related. Carter et al. (2022) show that 95%

between financial targets and ESG goals, suggesting a general desire of a firm to balance its financial objectives with long-term sustainability (Caskey and Ozel, 2017; Liu et al., 2021). By studying adjustments to earnings-based incentives in CEO pay after ESG incidents, we intend to shed new light on how firms address challenges associated with building a sustainable business in ways that align with stakeholder expectations.

We argue that by reducing earnings-based incentives in CEO compensation, firms can shift CEOs' attention away from financial metrics and toward ESG performance in response to ESG incidents. Our reasoning is twofold. First, because economic resources are scarce (Milgrom and Roberts, 1995), allocating them to improve ESG performance means fewer resources can be allocated to financial profit maximization, which would be considered suboptimal by CEOs whose compensation is strongly tied to earnings. Thus, CEOs with large earnings-based incentives may choose to ignore the adverse effects of their decisions on their firms' ESG performance (Bennett et al., 2017; Dechow and Sloan, 1991; Ederer and Manso, 2013). Furthermore, financial earnings do not necessarily capture a firm's ESG performance in an adequate or timely manner (Abernethy et al., 2019; Christensen et al., 2021). This imprecise measurement of ESG performance distorts incentives, leading to reduced efficiency of compensation design (e.g., Holmstrom and Milgrom, 1991; Laffont and Martimort, 2009). Firms involved in ESG incidents may feel immediate pressure to address ESG concerns (Cohen et al., 2023; Edmans, 2023), but heavily compensating CEOs on earnings does not seem to function effectively to motivate CEOs to improve ESG performance. We thus predict that firms involved in ESG incidents reduce earnings-based incentives in CEO compensation.

To empirically examine our prediction, we analyze data on CEO compensation design from Incentive Lab, a widely used database that collects detailed information about contractual

of performance-based cash bonuses and 67% of performance-based equity grants with vesting schedules are tied to at least one earnings-based metric.

terms tied to performance metrics from firms' proxy statements (Bennett et al., 2017; Bettis et al., 2018). We employ two empirical measurements—the target payout if earnings targets are achieved and the relative weight of earnings metrics in CEO pay calculations—to proxy the importance of earnings-based incentives in CEO compensation (Carter et al., 2022; De Angelis and Grinstein, 2015). We measure ESG incidents based on the extent of coverage by influential media outlets, because misdeeds that attract public attention are likely to have repercussions for the firms involved (Burke, 2022; Gantchev et al., 2022).

Our findings are consistent with our expectations: following ESG incidents, firms significantly reduce earnings-based payouts and the weight of earnings metrics in CEO compensation packages. Compared to other firms, firms with ESG incidents will decrease their CEOs' earnings-based target payouts by 47%. We test the robustness of our findings by addressing plausible endogeneity, including adopting entropy balancing (Hainmueller, 2012; McMullin and Schonberger, 2020), a two-stage least squares approach using the average number of ESG incidents involving local firms in other industries as an instrumental variable (Chen et al., 2015), and various difference-in-differences (DID) analyses. We also apply alternative measurements for the firm's urgency to respond to ESG incidents, including the number of incidents and the incidents of ESG rating being downgraded. We further control for other plausible explanations for the changed CEO compensation design, such as CEO turnover, CEO ownership, institutional ownership, and whether the firm has a sustainability committee. In all cases, our findings indicate that firms involved in ESG incidents significantly decrease the importance of earnings in performance metrics attached to CEO compensation.

Several sets of additional analyses add nuance to these findings. Our first set of tests explores the condition where a firm perceives a stronger need to respond to ESG incidents by adjusting its CEO compensation design. Here we explore which dimensions of ESG matter most. We find that incidents related to social and governance issues explain downward

adjustments in earnings-based incentives in CEO compensation, while environmental ones do not. Environmental issues are often initiated by community organizations or environmental groups (Hidayat and Stoecker, 2018; Shaffer, 1995). Our finding suggests that those stakeholders may have less influence over CEO compensation design. Next, we classify firms as consumer-sensitive versus less consumer-sensitive. Our subsample analysis shows that less consumer-sensitive firms grant significantly fewer earnings-based incentives to the CEO following ESG incidents. Consumer-sensitive firms, in contrast, do not significantly adjust the importance of earnings in CEO compensation design. Consumers often react to ESG incidents by boycotting implicated firms' products (Duan et al., 2023; Houston et al., 2023). As a result, earnings reported by consumer-sensitive firms may still convey timely information on their ESG performance. The findings thus are consistent with our argument that firms adjust the relative importance of performance-based incentives to improve the efficiency of compensation design.

In the second set of tests, we examine whether reduced earnings-based incentives are accompanied by increased incentives tied to alternative performance metrics. We find that the aggregate amount of performance-based incentives does not change significantly after an ESG incident, whereas the use of nonfinancial-based performance metrics, such as stock price, activity-based targets, and operational targets, increases significantly. Furthermore, we find that following ESG incidents, firms are more likely to incorporate explicit ESG performance targets into CEO compensation. In addition, compared to equity plans, the reduction in earnings-based incentives is particularly prominent in non-equity plans. These findings collectively imply that firms modify the structure of performance measurement, rather than the overall amount of incentive pay, when reducing earnings-based incentives in CEO compensation.

Our final set of additional analyses explores whether reductions in earnings-based incentives following ESG incidents indeed improve the efficiency of CEO compensation design. We find that, although an ESG incident hurts a firm's long-term valuation, this harm is attenuated if the firm subsequently reduces earnings-based incentives in CEO compensation. We also observe a similar pattern when using shareholders' say-on-pay voting outcomes to proxy the market's perception. That is, we find that the rate of dissent increases when a firm reduces earnings-based incentives in CEO compensation in years without ESG incidents but is attenuated when a reduction follows an ESG incident. We further show that reductions in earnings-based incentives appear to work: affected firms are less likely to have future ESG incidents. Overall, our findings suggest that a firm's strategy to reduce CEOs' earnings-based incentives in response to ESG incidents appears to comport with efficient contracting in CEO compensation design.

This paper contributes to the literature in several ways. First, it contributes to research on performance incentives in CEO compensation design (De Angelis and Grinstein, 2015; Ittner et al., 1997; Jensen and Murphy, 1990; Prendergast, 1999). We show that, although the compensation contract that a firm offers to its CEO before the ESG incident is not necessarily suboptimal, the firm may want to adjust its CEO compensation in response to the incident. As such, we add to the literature by demonstrating that CEO compensation design is dynamic: firms respond to incidents and adjust the use of performance metrics to steer CEOs' behavior. We also add to the risk management literature (Dionne, 2013) and the recent studies on the adverse impacts of ESG incidents (Gantchev et al., 2022; Kölbel et al., 2017). That is because we show that adjustments to CEO compensation seem to be appreciated by stakeholders, suggesting that the occurrence of negative events may trigger beneficial corporate actions. Our findings, thus, represent a silver lining for corporate practices, as ESG crises can lead to better compensation structures if firms respond properly.

Our study also contributes to research that explores the role of the media in influencing CEO compensation design. Executive compensation consistently attracts media attention (Abernethy et al., 2022; Hooghiemstra et al., 2015). The literature shows that the media, for example, helps expose excess CEO pay (Core et al., 2008), predict shareholder discontent over say-on-pay (Hooghiemstra et al., 2015), constrain managers' ability to profit from insider trading (Dai et al., 2015), and shape CEOs' post-retirement career prospects (Liu et al., 2017). We study CEO compensation design in response to media coverage of novel ESG events, even though the news might not seem to be immediately relevant to firms' compensation practices. Our findings highlight that decisions about performance-based incentives in CEO compensation can be strategically important responses to ESG-related crises.

Furthermore, our study makes methodological contributions. Studies often rely on voluntary firm disclosures to define ESG incidents, which may present problems because the timeliness, transparency, accuracy, completeness, and accessibility of these disclosures vary (Christensen et al., 2021). ESG commercial ratings, also commonly used in the literature, can be subject to similar issues, as they are generally based on firm disclosures (Baker et al., 2023). Our use of media coverage to identify ESG issues better captures how ESG incidents are exposed to the public. Importantly, the disclosure of ESG incidents in our sample is less likely to be influenced by a firm's reporting strategy, and our findings thus are less likely to be biased.

Our findings also have practical implications. Firms involved in ESG incidents often shift their strategic priorities. The efficacy of doing so to improve ESG performance, however, is often unclear (Chakravarthy et al., 2014; Christensen et al., 2021). We show that reducing earnings-based incentives in CEO compensation can align resource allocation decisions with a firm's long-term sustainability goals and support socially responsible practices. Our findings thus can help market participants to better understand the effectiveness of firms' responses to negative events.

## 2. Literature and hypothesis development

### 2.1. Review of the literature

Extensive research has examined the association between a company's ESG profile and its financial performance. Findings show that ESG activities enhance firm performance (Albuquerque et al., 2019; Dimson et al., 2015), facilitate favorable relationships with major stakeholders including customers and employees (Edmans, 2011), and lower the cost of capital required by green investors (Pástor et al., 2021). Socially irresponsible behaviors, in contrast, hurt firm value. For example, Gantchev et al. (2022) show that the market reacts negatively to news about ESG incidents. Negative media coverage of ESG performance also relates to reduced analyst coverage (He and Li, 2022), decreased opportunism in earnings forecasts (Derrien et al., 2023), and an increased likelihood of customer boycotts and whistleblowing incidents (Kölbel et al., 2017). Evidence shows that firms involved in negative ESG events demonstrate a high urgency to respond by increasing charitable contributions (Akey et al., 2024) as well as dismissing their CEOs and appointing directors with charity experience (Burke, 2022; Gertsberg et al., 2023).

We focus primarily on CEO compensation design, which critically determines the behavior and decisions of top executives (Grossman and Hart, 1992; Jensen and Murphy, 1990; Prendergast, 1999; Stiglitz, 1974). Specifically, we investigate how firms adjust CEOs' performance-based incentives after ESG-related crises. The economics literature posits that explicit performance incentives in compensation contracts constitute an effective mechanism for inferring unobservable CEO action, even though in most cases the metrics are imperfect (Harris and Raviv, 1979; Shavell, 1979). The relative weight of a performance-based incentive in CEO compensation is predicted to increase as metrics become more sensitive to the CEO's decisions but to decrease as accompanying noise unrelated to the CEO's efforts increases (Holmstrom, 1979; Laffont and Martimort, 2009; Lambert and Larcker, 1987). The congruity

of performance incentives with organizational goals influences a CEO's decision horizon (Feltham and Xie, 1994), and a firm may adjust the mix of performance incentives to guide CEO behavior in line with strategic planning to balance a firm's short- and long-term goals (Balsam et al., 2011; Bushman et al., 1996).

The prevalent use of earnings-based performance incentives has been predicted in the literature. Earnings metrics are considered to play a "stewardship role" by providing information about how a CEO's decisions affect a firm (Bushman and Indjejikian, 1993; Gjesdal, 1981). Moreover, accounting information shields CEOs from noise arising from market-wide factors and uncontrollable events, thereby reducing firms' compensation costs (Sloan, 1993). The extensive application of earnings-based incentives in CEO compensation has also been documented empirically (Bushman and Smith, 2001; Carter et al., 2022; De Angelis and Grinstein, 2015). So have the undesirable effects of attaching earnings targets to CEO pay, such as increased CEO opportunism in financial reporting (Bennett et al., 2017; Healy, 1985; Holthausen et al., 1995), incentivizing CEOs to forego long-term growth opportunities (Dechow and Sloan, 1991; Edmans et al., 2017), and demotivating CEOs to invest in ESG initiatives (Liu et al., 2021; Xu and Kim, 2022).[3]

We argue that, when selecting performance targets, it is important to consider the behavioral repercussions. We investigate how firms adjust the importance of earnings-based performance incentives in CEO compensation after ESG incidents. Given the potential conflicts between maximizing earnings and improving ESG performance, studying earnings-based incentives in CEO compensation may uncover how firms address the expectations of diverse stakeholders as they attempt to mitigate the adverse impacts of ESG incidents.

[3] Although firms have increasingly applied ESG metrics when evaluating CEO performance (Christensen et al., 2021; Qin and Yang, 2022), studies have yielded mixed findings on the effectiveness of linking CEO pay to ESG metrics to improve firms' progress toward fulfilling long-term ESG commitments (Cohen et al., 2023; Jian and Lee, 2015).

### 2.2. How do firms adjust earnings-based incentives in CEO pay after ESG incidents?

When firms' strategic priorities change, performance-based incentives are expected to be adjusted accordingly (Balsam et al., 2011). We argue that, given the severe consequences of ESG incidents (Gantchev et al., 2022; Kölbel et al., 2017), implicated firms will strive to restore stakeholders' confidence and adjust CEOs' compensation packages accordingly.

We predict that firms will reduce earnings-based incentives in CEO compensation following ESG incidents. Corporate decisions are bounded by available economic resources, and, in resource allocation decisions, a CEO will prioritize activities perceived to be strategically important (Abernethy et al., 2022; Milgrom and Roberts, 1995). What gets measured, gets managed (Van der Oord, 2021). A CEO whose pay is closely tied to earnings would try to maximize compensation payouts by prioritizing earnings performance and allocating resources accordingly (Liu et al., 2021; Xu and Kim, 2022). When facing trade-offs in resource allocation, these CEOs maximize short-term financial performance but forego investing in projects with long-run benefits that could reduce current earnings (Bennett et al., 2017; Edmans et al., 2017; Healy, 1985). Firms' strategic needs to develop sustainable competitive advantage thus are compromised, which is particularly concerning to firms with urgent needs to mitigate the adverse impacts of ESG incidents. Importantly, our prediction also relates to the noisiness of earnings-based performance metrics in capturing the repercussions of a CEO's ESG-related decisions. Earnings performance metrics are not only less timely in inferring how resources are being allocated to ESG initiatives but also less informative about a firm's progress in ESG performance (Abernethy et al., 2019; Christensen et al., 2021; Kölbel et al., 2017). Performance metrics with high levels of noise but low levels of informativeness are less likely to be incorporated into efficient compensation designs, suggesting the reduced use of earnings-based performance targets in measuring managerial efforts to improve ESG performance.

Overall we argue that, in response to ESG incidents, firms adjust CEOs' performance-based incentives to direct their attention toward improving ESG performance. Specifically, we predict:

**H1***: Firms reduce earnings-based incentives in CEO compensation packages following ESG incidents.*

## 3. Empirical methodology

### 3.1. Data sources and sample selection

We acquired data from multiple sources. First, we retrieved information on performance metrics used in CEO compensation packages from the ISS Incentive Lab database. Incentive Lab collects detailed information on compensation contracts from firms' proxy statements (DEF 14A filings).[4] We identified the type and the associated weight of each performance metric attached to annual performance-based incentives in CEOs' compensation packages. We collected information on media coverage of negative ESG events from RepRisk, a database that has been increasingly used in academic research to track firms' ESG risks (e.g., Dai et al., 2021; Houston and Shan, 2022; Kölbel et al., 2017). Using artificial intelligence and machine learning techniques, RepRisk identifies negative news on firms' ESG practices appearing in a range of media sources (e.g., print media, organizational and governance bodies, social media) daily, capturing its severity, novelty, and reach.[5]

Our sample period spans from 2007 (the year RepRisk began collecting data) to 2021. Merging the RepRisk data with Incentive Lab compensation data yields 14,709 firm-year

[4] The transparency of CEO compensation design improved significantly after an SEC reform in 2006. The reform required U.S. firms to disclose their executive compensation policies and explain how executive compensation was tied to firm performance (Gong et al., 2011).

[5] Severity relates to the extent of an incident's impact. Novelty indicates whether the implicated firm is experiencing a particular ESG issue for the first time. Reach reflects the significance of the reporting media: high-reach media include global and influential media outlets, whereas low-reach sources include social media, local media, and media established by smaller NGOs or local governmental bodies. To ensure the validity of predictions based on machine-learning models, RepRisk analysts manually review the data and approve the final classifications.

observations. We retrieve firm fundamentals from Compustat, stock information from CRSP, and CEO and board characteristics from BoardEx. We merge these data with our sample, excluding firms in the financial and utilities industries (Standard Industry Classification codes 6000–6999 and 4900–4999) (Hayes et al., 2012). Our final sample includes 7,929 observations from 808 unique firms. Our sample selection procedure is illustrated in Panel A of Table 1 and Panels B and C present sample distributions by year and by industry, respectively.

### 3.2. Definitions of primary empirical variables

#### *3.2.1 Importance of earnings-based incentives in CEO pay*

Based on the descriptions in proxy statements, we categorize performance metrics into four groups: earnings-based (e.g., earnings, earnings per share, and ROA), non-earnings-based, market-based, and other nonfinancial metrics (Carter et al., 2022).[6] We then classify the performance-based payouts granted to CEOs as cash bonus plans, performance-vesting shares, and performance-based options. For each award, we sum up the total weight of earnings-based performance metrics and then multiply the total weight by the estimated future target payout to obtain the target payout contingent on earnings performance for each performance-based award. Following Carter et al. (2022), we classify the awards into non-equity plans, including cash payouts (i.e., annual bonuses) and long-term incentive plans with vesting periods, and equity plans, including payouts in the form of restricted shares and options. In our sample, earnings-based metrics are widely applied in both non-equity plans (average weight of 0.48) and equity plans (average weight of 0.43). Then we aggregate the target payouts at the CEO level because a CEO may receive multiple performance-based awards in a year.

We construct two measures to capture the importance of earnings-based incentives in CEO compensation. Our first measure is the total annual target payout based on achieving pre-

[6] Studies estimate the sensitivity of CEO compensation to several accounting earnings ratios (e.g., ROA) to measure the use of earnings-based performance metrics (Lambert and Larcker, 1987).

specified goals for all earnings metrics (*Tgtpayout_Earnings*). Following De Angelis and Grinstein (2015), our second measure captures the value-weighted average of the aggregate weight placed on earnings metrics in CEO compensation packages (*Weight_Earnings*). In Appendix A, we explain how we construct these two variables.

#### *3.2.2 ESG incidents*

We use novel ESG news with a high level of reach to proxy the occurrence of ESG incidents (Akey et al., 2024). Our empirical choice is motivated primarily by two considerations. First, compared to firms' disclosures, the media often reveal ESG events in a more timely, transparent, and unbiased manner (Baker et al., 2023; Li and Wu, 2020). Media coverage of ESG incidents thus is arguably more exogenous to a firm, as it is less influenced by firms' disclosure strategies and compensation design policies. Second, the ESG incidents covered in our sample are exposed by the influential press; such news tends to travel quickly and spread widely, triggering immediate responses from firms (Burke, 2022).[7]

### 3.3. Empirical model

To test our hypothesis, we examine how firms adjust the importance of earnings-based incentives in CEO compensation packages using the following OLS regression:

$$Importance\ of\ earnings_{i,t+1} = \beta_1 ESG\_Incident\_Dummy_{i,t} + Controls_{i,t} + Industry\ FE + Year\ FE + \epsilon_{i,t}, \quad (1)$$

where the importance of earnings-based incentives is measured by $Tgtpayout\_Earnings_{i,t+1}$ and $Weight\_Earnings_{i,t+1}$. Our main variable of interest, $ESG\_Incident\_Dummy_{i,t}$, indicates whether a firm experienced at least one novel and high-reach ESG incident in year *t*. H1 predicts that firms involved in ESG incidents reduce the importance of earnings metrics in CEO

[7] We deliberately choose not to incorporate a severity dimension into our measure. The severity of an ESG incident in RepRisk is based on analysts' evaluations and is arguably subjective. In comparison, reach relates to the media source, which is objective, and the novelty of an ESG incident is defined based on a firm's historical record.

compensation. That is, the coefficient of *ESG_Incident_Dummy*$_{i,t}$ is expected to be significantly negative, i.e., $\beta_1 < 0$ in Model (1).

We also include several control variables that might influence which performance metrics are used to determine CEO compensation, such as firm size, strategy (Balsam et al., 2011; Ittner et al., 1997), growth opportunities (Coles et al., 2006), firm performance, and leverage ratio. We further control for board and CEO attributes, including board size, board independence, CEO duality, and CEO tenure (Carter et al., 2022). We include industry- and year-fixed effects to control for potential impacts of industry characteristics and time-invariant factors. Robust standard errors are adjusted for heteroskedasticity and clustered at the firm level. We winsorize all continuous and unlogged variables at 1% and 99%. Detailed variable definitions are outlined in Appendix B.

Panel D of Table 1 presents descriptive statistics for the variables used in the main analysis. As Incentive Lab focuses on the 750 largest U.S. firms by market capitalization, our sample firms are larger than most firms in the Compustat universe. On average, over 45% of performance-based CEO compensation is explicitly related to earnings metrics, indicating substantial impacts of earnings on CEO pay (Bushman et al., 1993; Carter et al., 2022). The mean target payout for achieving earnings goals is $2.54 million, approximately three times the average CEO salary in our sample (i.e., $0.95 million). ESG incidents are reported in 12.6% of firm-year observations, and 365 firms never experienced any ESG incidents during the sample period. Furthermore, we notice that 37% of firms in our sample that have included ESG performance targets in CEO compensation are still involved in ESG incidents in the future year. Pearson pairwise correlations among control variables do not appear to raise significant multicollinearity concerns, as the variance inflation factor value is well below the threshold of 10 (Kennedy, 1992).

## 4. Discussion of main results

### 4.1. Earnings-based incentives in CEO compensation and ESG incidents

To gain some preliminary insights into how firms change compensation practices following ESG incidents, we study CD&A in proxy statements of firms implicated in ESG incidents. We notice that changes are often made to CEO compensation contracts following the incidents. For example, Apache Corporation, a company that reported the most environmental and safety incidents as named by the US House Natural Resources Committee, announced its compensation actions in its 2014 proxy statement, including replacing earnings-related incentives with incentive schemes that are more future performance-oriented. Bristol Myers Squibb was involved in a severe violation of the Foreign Corrupt Practices Act in 2015 and paid a settlement of $11 million. In its 2016 proxy statement, the company announced a reduction of earnings-based incentives in executive compensation. Similarly, in its 2016 proxy statement, Molson Coors Beverage reduced the weight placed on income targets attached to CEO compensation after its ESG incident.

We next apply Model (1) using a large sample to test whether firms reduce earnings-based incentives in CEO compensation following ESG incidents. Our regression results are reported in Table 2. Our variable of interest is *ESG_Incident_Dummy* measured in year *t*, and the dependent variables are *Tgtpayout_Earnings* in column (1) and *Weight_Earnings* in column (2), both measured in year $t + 1$, to capture the links between CEO pay and earnings metrics. Consistent with our expectations, the coefficients of *ESG_Incident_Dummy* are significantly negative in columns (1) and (2), suggesting that firms respond to ESG incidents by diverting the CEO's attention away from earnings goals. In terms of the economic significance of our findings, the coefficient of *ESG_Incident_Dummy* is -0.636 in column (1) where *Tgtpayout_Earnings* is the dependent variable, indicating that a CEO's target payout linked to earnings performance decreased by 47% [=exp(-0.636) - 1] following ESG incidents.

Regarding control variables, our results are generally consistent with the literature. Firms with greater growth opportunities—such as those with a higher market-to-book ratio or larger sales growth—as well as loss-making firms, tend to rely less on earnings-based incentives in CEO compensation, suggesting that financial earnings may be too noisy for capturing managerial efforts in those firms (Bushman et al., 1993, 1996; Ittner et al., 1997). Relatedly, the positive association between ROA and the use of earnings-based incentives in CEO pay may indicate that, in firms with higher ROA, earnings-related metrics are considered more informative and thus are applied more intensively to determine CEO compensation (Prendergast, 1999). Board size reflects a firm's business complexity (Boone et al., 2007). The positive association between board size and earnings-based incentives indicates that the coordination and stewardship roles of financial earnings are particularly valuable in more complex firms.

Collectively, our results are consistent with our prediction that firms respond to ESG incidents by reducing earnings-based incentives in CEO compensation. Furthermore, the downward adjustments seem to be both statistically and economically significant.

### 4.2. Endogeneity

Our findings might be subject to endogeneity problems. For example, unobserved firm characteristics, such as corporate culture, may be correlated with both the occurrence of ESG incidents and the design of CEO compensation. In addition, firms involved in ESG incidents may differ systematically from peers not involved in ESG incidents. Furthermore, a firm's ESG profile could relate to CEO compensation, suggesting that the ESG incident measure could be endogenous. In this section, we use several methods to address the potential endogeneity in our findings.

### *4.2.1 Firm fixed effects*

To address the plausible effects of plausible omitted, time-invariant factors that affect CEO compensation design, we perform a DID analysis controlling for two-way fixed effects (including firm- and year-level fixed effects) to compare adjustments to earnings-based incentives from the pre- to the post-incident period in treated firms against compensation practices in control firms that are unaffected by ESG incidents. We replace *Industry FE* in Model (1) with *Firm FE* and apply the following equation:

$$Importance\ of\ earnings_{i,t} = \beta_1\ Post_{i,t} + Controls_{i,t} + Firm\ FE + Year\ FE + \epsilon_{i,t}, \quad (2)$$

where the dependent variable is *Tgtpayout_Earnings* or *Weight_Earnings* in year *t*. Following Akey et al. (2024) and Hoepner et al. (2023), we construct a series of post-event variables. *Post_Y1* is a dummy variable equal to 1 if a firm was exposed to an ESG incident in the focal or previous year (i.e., a two-year window). *Post_Y2* and *Post_Y3* are defined similarly.[8]

Panel A of Table 3 presents the empirical results of Model (2), where the dependent variable is *Tgtpayout_Earnings* in columns (1) to (3) and *Weight_Earnings* in columns (4) to (6). All post-event variables are significantly negative, suggesting that our main findings endure after controlling for firm fixed effects. Furthermore, reductions in earnings-based incentives in CEO pay do not seem to be transitory, as shown by the significantly negative coefficients of *Post_Y2* and *Post_Y3* in columns (2), (3), (5), and (6). As ESG incidents are likely to negatively and persistently affect firm value and future profitability (Akey et al., 2024), firms involved in ESG incidents appear to continue to focus on ESG issues and modify their CEO compensation accordingly.

We further employ a staggered DID specification, as firms may be exposed to ESG incidents at different times. We focus on the first-time exposure, considering its significance

[8] As noted by Baker et al. (2022), as the percentage of never-treated firms rises, the likelihood of estimation bias associated with the two-way fixed effects staggered specification shrinks. In our sample, the percentage of firm-year observations among never-treated firms is 41.50% (3,290 of 7,929 observations), which alleviates the concern of estimation bias.

to the implicated firm and stakeholders. In addition, examining the first-time exposure allows us to check the parallel trends assumption. Control firms are those that never experienced any ESG coverage during the RepRisk screening period. Frequently exposed firms (i.e., those experience with more than five ESG incidents during the whole sample period) are excluded because they are less comparable to other treated firms.[9] We further apply a propensity-score matching (PSM) to enhance the comparability of the treated and control firms included in the analysis.[10] We then modify Model (2) using a newly constructed independent variable—$Post_{i,t}$, which takes the value of 1 in the year of the ESG incident and all subsequent years and zero otherwise. Columns (1) and (2) in Panel B of Table 3 show that our results are robust using the staggered PSM-DID specification. Furthermore, we test the pre-treatment trend. Particularly, we replace *Post* with six indicator variables *Before(-2)*, *Before(-1)*, *Current*, *After(+1)*, *After(+2)*, and *After(+3)*, indicating how far the current year is before or after the incident. The insignificant coefficients on *Before(-2)* and *Before(-1)* in columns (3) and (4) support the parallel trends assumption, suggesting that treated and control firms had similar CEO earnings incentives before their ESG incidents. In column (4), the coefficients are significantly negative in the post-incident indicators when *Weight_Earnings* is the dependent variable, while we notice that, when *Tgtpayut_Earnings* is used as the dependent variable, the coefficients of *Current* and *After(+1)* are not statistically significant, as shown in column (3).

We further employ the stacked DID model design to check the robustness of our findings using the staggered sample (Baker et al., 2022). Specifically, we construct a series of cohorts based on the years that treated firms experienced their first ESG incident. For each

[9] Results remain consistent if we use seven or nine incidents as the cutoff.

[10] We first fit a logit model to estimate firms' likelihood of being exposed to ESG incidents. The independent variables include the same firm control variables as in the main regression, i.e., *Firm Size*, *Leverage*, *Market-to-book*, *Loss*, *Strategy*, *Sales Growth*, *ROA*, *Stock Return*, *CEO Duality*, *CEO Tenure*, *Board Size*, and *Board Independence*. We then match treatment firm-year observations with control firm-year observations based on the estimated propensity score using one-to-one nearest neighbor matching without replacement. Our results remain consistent if we further add lagged earnings incentives as the covariates in the logit regression.

cohort, we construct a cohort-specific dataset, including both the observations from treated firms and observations from the control firms, and then we stack all datasets. Following Iliev and Roth (2023), we estimate the stacked DID regression by further controlling for cohort*firm fixed effect and cohort*year fixed effect. Panel C of Table 3 summarizes our stacked regression results, with and without PSM, and they are largely consistent with our main findings.

### *4.2.2 Entropy balancing*

Because a firm's involvement in ESG incidents might not be random (Bebchuk and Tallarita 2022; Edmans, 2023; Liu et al., 2021), we apply entropy balancing to balance covariates within a binary treatment (i.e., involvement in ESG incidents in a year) (Hainmeuller, 2012; McMullin and Schonberger, 2020) and adjust inequalities in all control variables at the first (mean), second (variance), and third (skewness) moments. Untabulated results show large differences in the descriptive statistics of control variables between firms with and without ESG incidents. However, these differences in the covariate distributions disappear after entropy balancing, indicating that the method achieved a sufficient balance between firms with ESG incidents and those without. Panel A of Table 4 summarizes the results of Model (1) using the entropy-balanced sample. The coefficients of *ESG_Incident_Dummy* continue to be significantly negative across both columns where either *Tgtpayout_Earnings* or *Weight_Earnings* is the dependent variable. Therefore, our finding that firms reduce earnings-based incentives in CEO pay after ESG incidents remains consistent after addressing the potential nonrandom occurrence of ESG incidents in our sample.

### *4.2.3 Instrumental variable approach*

Next, we employed a two-stage instrumental variable approach to address the potential endogeneity of the ESG incident measure. First, we explicitly model a firm's likelihood of being involved in ESG incidents using a probit regression with an instrumental variable included. Then, we replicate Model (1) by including the fitted value from the first-stage

regression as an instrument for *ESG_Incident_Dummy*. The instrumental variable included in the first stage regression is the average number of ESG incidents in other local industries (*ESG_Incident_Dummy_Local*) (Chen et al., 2015). We argue that ESG incidents in a region, including those in other industries, relate positively to a firm's likelihood of being involved in ESG incidents, whereas ESG profiles of firms in other industries do not seem to directly impact a focal firm's CEO compensation design.[11]

Panel B of Table 4 summarizes the empirical results of the two-stage least squares analysis, where the first-stage results are reported in column (1), and the second-stage findings are presented in columns (2) and (3). In column (1), the coefficient for *ESG_Incident_Dummy_Local* is significantly positive, which is consistent with our prediction and meets the relevance condition of including an instrumental variable. More importantly, when regressing the use of earnings metrics on *Fitted_ESG_Incident_Dummy*, which is the fitted value of *ESG_Incident_Dummy* from the first-stage regression, the coefficients on *Fitted_ESG_Incident_Dummy* are consistently significant and negative in columns (2) and (3), suggesting that our finding on the reduced importance of earnings metrics in CEO compensation packages following ESG incidents remains robust after controlling for endogeneity.

### 4.3. Other robustness tests

Among firms involved in ESG incidents (i.e., 443 firms), 35.2% experience just one, 21.2% experience two, and the rest experience more than two during the sample period. We create an alternative variable to capture a firm's involvement in ESG incidents by counting the number of high-reach and novel ESG incidents in a year. We replicate Model (1) using this

[11] The relative performance evaluation literature shows that firms often benchmark their compensation designs against pay practices in other firms within the same industry (Aggarwal and Samwick, 1999).

alternatively constructed variable as our key variable of interest, and our findings are consistent with our main results.

Rating agencies, including those providing ESG ratings, have a substantial impact on capital markets (Kisgen, 2006; Serafeim and Yoon, 2022). We next employ an indicator for a downgraded ESG rating as an alternative measure for the firm's incentive to respond to an ESG incident. Specifically, we investigate whether firms reduce the earning-based incentive in CEO compensation packages when their ESG ratings have been downgraded. We acquired ESG rating information—Reputation Risk Ratings (RRRs)—from the RepRisk database. RRRs span from AAA to D, with 10 rating tiers across four categories—A, B, C, and D—representing low, median, high, and very high ESG risk exposure, respectively.[12] Following Kuang and Qin (2013), we create a series of downgrade variables and use the newly constructed downgrade measures as the key variables of interest in Model (1).[13] Our empirical results (untabulated) show that firms significantly reduce earnings-based incentives for CEOs when their RRRs are downgraded to the edge of the high or very high ESG risk category. Therefore, in comparison to their peers with low-risk ESG ratings, firms with high or very high-risk ratings have a particularly strong motivation to respond by directing the CEO's attention away from earnings performance.

We also examine the robustness of our main findings using two alternatively constructed samples. First, we exclude firms involved in ESG incidents that are either nonnuanced or not high-reach during the current year. That is, our newly constructed sample consists of firms implicated in ESG incidents that are nuanced and high-reach as well as firms without any type of ESG incidents during this year (3,977 observations). In another robustness test, we exclude CEO turnover years (656 observations), as CEO dismissal increases following

[12] RRRs are reported daily. We construct firm-level annual RRRs by taking the average of the daily RRRs during a given year.
[13] Given the prominence and significance of ESG rating downgrades, we expect firms to initiate compensation actions in the year when a downgrade occurs.

negative media coverage of ESG (Burke, 2022). In that case, the reduced use of earnings-based incentives in CEO compensation may be implemented due to CEO turnover, rather than the ESG incidents *per se* (Qin and Yang, 2022). We replicate our prior analysis using these alternative samples and obtain empirical findings consistent with our main results. Furthermore, we confirm the robustness of our findings after including additional control variables, including CEO turnover, CEO ownership, institutional ownership, and the presence of a sustainability committee at the firm.[14]

Taken together, the additional robustness tests suggest that our main findings on the relationship between ESG incidents and reductions in earnings-based incentives in CEO compensation remain consistent.

## 5. Additional analyses

### 5.1. When do firms have a stronger motivation to adjust CEO compensation designs?

So far, we have demonstrated that firms involved in ESG incidents respond by reducing earnings-based incentives in CEO compensation contracts. Some firms may have a stronger motivation to do this than others. In this section, we explore when a stronger motivation arises.

#### *5.1.1 E-S-G*

Environmental (E), social (S), and governance (G) aspects jointly influence a firm's ESG risk profile (Cohen et al., 2023; Edmans, 2023). In this section, we explore the impacts of specific types of ESG issues on a firm's CEO compensation design. We construct three dummy variables: *E_Incident_Dummy* for environmental issues, such as global or local pollution, GHG emissions, impacts on landscapes, ecosystems, and biodiversity, and waste issues;

[14] Furthermore, we follow Burke (2022) and identify CEO turnover that is performance-driven using information on reasons for the turnover event acquired from the Audit Analytics Director and Officer Changes database. We again obtain consistent results. We also follow Burke et al. (2019) to identify sustainability committees and split the sample into firms with versus without sustainability committees (1,039 versus 5,305 observations). We perform our prior analysis in the two groups, respectively, and our main findings hold in both groups, suggesting that firms do not consider the establishment of a sustainability committee to fully substitute for adjusting CEO compensation design to improve ESG performance.

*S_Incident_Dummy* for social issues, including social discrimination, forced labor, child labor, discrimination in employment, poor employment conditions, human rights abuses; and *G_Incident_Dummy* for governance issues, including violations of national or international legislations, fraud, corruption, bribery, and misleading communications.

We re-run Model (1) using the three E-S-G dummies as variables of interest. Our empirical findings are reported in Panel A of Table 5. The coefficients for *S_Incident_Dummy* and *G_Incident_Dummy* are significantly negative, while the coefficients for *E_Incident_Dummy* are insignificant in both columns. A plausible explanation is that social and governance issues often involve stakeholders, such as employees, who can directly influence corporate decision-making. As a result, CEO compensation packages may be designed to reflect their interests. Discussions of environmental issues, however, are often initiated by community organizations or environmental groups; these stakeholders have less influence over corporate decision-making. Taken together, our findings suggest that firms are more motivated to reduce earnings-based incentives in CEO compensation in response to social or governance incidents.

### *5.1.2 Consumer-sensitive industries*

Consumers often disapprove of products or services provided by firms with low ESG profiles (Duan et al., 2023; Houston et al., 2023). Consumer reactions, ranging from immediate boycotts to a long-term shift in purchasing behavior, can directly influence a firm's reported earnings. As such, reduced earnings of a firm whose business models are sensitive to consumer purchases would indicate the firm's deteriorated ESG performance. We predict that firms operating with a high degree of consumer sensitivity might not necessarily reduce the importance of earnings in CEO compensation, as, in those firms, reported earnings carry direct relevance and informativeness to evaluate and motivate their ESG performance.

We follow Hanlon and Slemrod (2009) and employ the firm-level advertising expense scaled by sales to measure a firm's consumer orientation. We group firms with scaled advertising expenses in the top quintile of the sample as highly consumer-sensitive. We also follow Burke et al. (2019) to define industries with two-digit SIC codes of 01, 02, 20, 21, 28, 40, 45, 48, 53, 54, 61, 62, 63, 64, and 99 as being consumer-sensitive. We group the observations into highly consumer-sensitive industries and less consumer-sensitive ones. We analyze Model (1) in each group and summarize the results in Panel B of Table 5. The coefficients of $Tgtpayout\_Earnings_{t+1}$ and $Weight\_Earnings_{t+1}$ are significantly negative in columns (3) and (4) but not in columns (1) or (2),[15] which suggests that firms operating with high consumer sensitivity do not reduce the importance of earnings-based incentives in CEO compensation following ESG incidents.[16]

## 5.2. What other adjustments do firms make to CEO compensation designs?

Apart from reducing earnings-based incentives, how else do firms adjust CEO compensation designs? We explore this question by examining whether firms (a) increase other performance-based incentives, (b) adjust the form of payout, i.e., non-equity-based versus equity-based compensation, or both, following ESG incidents.

### *5.2.1 Do firms increase other performance incentives?*

Reductions in earnings-based incentives shift CEOs' attention away from boosting short-term financial performance (Balsam et al., 2011; Ittner et al., 1997). We anticipate that, in addition to reducing the influence of earnings on CEO pay, firms would increase other performance incentives to extend the CEO's decision horizon. To test this intuition, we first investigate whether firms increase or decrease the overall use of performance-based incentives

[15] Wald tests comparing coefficient magnitudes suggest that the coefficient in column (3) is significantly larger than that in column (1), while the magnitude difference is insignificant between columns (2) and (4).
[16] Moreover, we identify supply-chain (B2B) firms using the industry classification by Delgado and Mills (2017) and find that B2B firms (i.e., firms with high customer sensitivity) will still adjust CEO earnings incentives following the ESG incidents.

following ESG incidents. We construct a measure to capture the total target payout of a CEO's performance-based incentives in a year (*Tgtpayout_Total*). We then use it as the dependent variable in Model (1). As presented in column (1) of Panel A in Table 6, the coefficient for *ESG_Incident_Dummy* is statistically insignificant, indicating that the overall level of performance-based incentives does not change in firms involved in ESG incidents. That is, firms do not significantly increase or decrease performance-based CEO compensation following the incidents.

Next, we identify which performance-based metrics replace earnings targets. We construct a group of measures to capture the target payout based on non-earnings metrics (*Tgtpayout_NonEarnings*), capital market performance (*Tgtpayout_Market*), and other nonfinancial metrics (*Tgtpayout_Others*). We then re-estimate Model (1) using each payout measure as the dependent variable. Our empirical results are summarized in columns (2) to (4) of Panel A Table 6. The ESG incident dummy (*ESG_Incident_Dummy*) is significantly positive in columns (3) and (4), suggesting that firms replace earnings-based incentives with market-based and other nonfinancial incentives in CEO pay in response to ESG incidents.

Our last set of tests examines the inclusion of ESG incentives in CEO pay, as this practice is widely advocated to motivate ESG performance (Christensen et al., 2021; Cohen et al., 2023; Qin and Yang, 2022). We obtain ESG contracting data from Refinitiv and create an indicator variable for ESG-related incentives in CEO compensation (*ESG_Linked*). We then use it as the dependent variable in Model (1), which we estimate using a logit regression. As shown in column (5) of Panel A in Table 6, the significantly positive coefficient of *ESG_Incident_Dummy* suggests that firms involved in ESG incidents are more likely to increase incentives based on ESG performance.

In sum, our findings indicate that firms involved in ESG incidents increase incentives directly related to ESG, capital market, and nonfinancial dimensions of firm performance in CEO compensation. Those metrics replace earnings metrics in CEO compensation design.

### *5.2.2 Equity versus non-equity payouts*

Besides performance measures used in compensation, the form of compensation also affects the CEO's decision horizon (Prendergast, 1999). For example, the amount of cash compensation is often pre-determined (Murphy, 1999), while, when compensation takes the form of equity, the payout is linked to the firm's stock price, which generally incentivizes a longer decision horizon (Ittner et al., 1997). Considering the potential effect relating to the form of CEO compensation, we group performance-based incentives into equity and non-equity plans. We re-calculate the aggregate target payout based on earnings and the weight of earnings metrics within these two compensation plans and re-estimate Model (1) in the two subsamples. We present our empirical results in Panel B of Table 6.

Overall, our findings suggest that firms adjust the importance of earnings in both forms of compensation, especially non-equity (cash) payouts. In designing CEO compensation packages, firms consider the form of compensation and its potential impact on a CEO's decision horizon. For example, firms are aware that non-equity plans may limit a CEO's decision horizon (Dechow and Sloan, 1991). Thus, they choose to reduce earnings-based incentives in non-equity grants. The insignificant coefficient of *ESG_Incident_Dummy* in column (3) plausibly implies that, in response to ESG incidents, firms grant more equity compensation, and the overall target payout remains unchanged even though the weight of earnings has been adjusted downward.[17]

[17] We further find that firms significantly increase performance-based equity compensation after ESG incidents, potentially to increase CEOs' focus on long-term decisions.

### 5.3. Earnings-based incentives in CEO compensation and future ESG incidents

Our prediction that firms involved in ESG incidents reduce earnings-based incentives in CEO compensation assumes that CEOs with such incentives are reluctant to invest in ESG initiatives, as returns are longer term while the financial costs are immediate (Abernethy et al., 2019; Cohen et al., 2023). Reduced investment in ESG projects likely increases ESG risk (Christensen et al., 2021). We examine whether earnings-based incentives in CEO compensation are associated with increased ESG risk. Specifically, we measure the importance of earnings in CEO compensation based on the target payout (*Tgtpayout_Earnings*) in year *t* and ESG risk based on negative media coverage of ESG incidents measured in year *t* + 1. We regress media coverage on the target payout, and the coefficients of *Tgtpayout_Earnings* are consistently positive in all columns of Panel A Table 7, which validates our assumption and suggests that attaching earnings targets to CEO compensation increases ESG risk.

### 5.4. Subsequent firm performance

The market appreciates design choices that improve the efficiency of CEO compensation contracts and align a CEO's interests with firm value (Grossman & Hart, 1992; Prendergast, 1999). However, if adjustments to a CEO's compensation structure are merely a strategic attempt to burnish a firm's public image, rather than to address underlying ESG issues, a modified compensation design is unlikely to improve a firm's ESG performance or to be welcomed by key stakeholders. In this section, we investigate the subsequent performance of firms that have reduced earnings-based incentives in CEO compensation after ESG incidents.

We employ several measures to capture firms' subsequent performance: Tobin's Q, which reflects a firm's long-term valuation (Abernethy et al., 2022); the dissent rate in say-on-pay voting, which directly reflects shareholders' opinions about a firm's compensation practices (Ertimur et al., 2013); and the occurrence of future ESG incidents. We employ the

following model to investigate the effect of earnings-based incentives on a firm's future performance:

$$Future\ Performance = \beta_1\ Earnings\_Down \times ESG\_Incident\_Dummy + \beta_2 ESG\_Incident\_Dummy + \beta_3 Earnings\_Down + Controls_{i,t} + Industry\ FE + Year\ FE + \epsilon_{i,t}, \quad (3)$$

where the dependent variables include *ΔTobin's Q* $_{i,t+1}$, which is the change in Tobin's Q from year $t + 1$ to year $t$ (*Tobin's* $Q_{i,t+1}$ - *Tobin's* $Q_{i,t}$); *ΔDissent* $_{i,t+1}$, which is similarly constructed and measures the change in the say-on-pay dissent rate from $t + 1$ to $t$; and $Avg\_Incidents_{i,t+2}$, the average number of ESG incidents in the subsequent two years.[18] *ESG_Incident_Dummy* is defined as before, indicating whether a firm is involved in a high-reach and novel ESG incident in year $t$. Additionally, *Earnings_Down* measures adjustments to earnings targets in year $t + 1$ from year $t$. Specifically, *Earnings_Down* takes a value of 1 if the change in the importance of earnings metrics ($Tgtpayout\_Earnings_{i,t+1}$ - $Tgtpayout\_Earnings_{i,t}$) is in the bottom quartile of the sample (i.e., the largest reduction in earnings-based incentives in CEO compensation) and 0 otherwise. All control variables are the same as in Model (1).

Panel B in Table 7 summarizes the regression results for Model (3). In column (1), where *ΔTobin's* $Q_{t+1}$ is the dependent variable, the coefficient of *ESG_Incident_Dummy* is significantly negative, consistent with findings that firm valuation drops after negative ESG events (Akey et al., 2024). Importantly, the coefficient of the interaction term *Earnings_Down* × *ESG_Incident_Dummy* is significantly positive in column (1), suggesting that decreasing the importance of earnings metrics in CEO compensation significantly attenuates the harms of ESG incidents on a firm's long-term valuation. The significantly negative coefficient of *Earnings_Down* in column (2) where $\Delta Dissent_{t+1}$ is used as the dependent variable, indicates

[18] We obtain consistent results when expanding the window till year $t + 3$ to measure a firm's future performance in Tobin's Q and subsequent ESG incidents. say-on-pay voting outcomes are acquired from ISS.

that, in years without ESG incidents, shareholders are more likely to vote against a reduction in earnings-based incentives. However, if the reduction in earnings-based incentives is adopted following ESG incidents, the say-on-pay dissent rate declines significantly. Column (3) reports the regression results when $Avg\_Incidents_{t+2}$ is used as the dependent variable. The coefficient on *ESG_Incident_Dummy* is significantly positive, suggesting that firms exposed to ESG incidents are more likely to be involved in future incidents (Glossner, 2021). Furthermore, the coefficient on *Earnings_Down* × *ESG_Incident_Dummy* is significantly negative in column (3), indicating that reducing earnings-based incentives in CEO compensation mitigates the risk of future ESG incidents.

Our collective findings show that adjustments to performance-based incentives in CEO compensation in response to ESG incidents are associated with subsequent improvements in firm performance. Reducing the importance of earnings in CEO pay is in line with optimal compensation contracting, as helps guide CEOs' decisions regarding the allocation of effort and resources to support the interests of firms' various stakeholders.

## 6. Conclusion

Firms involved in ESG incidents grapple with substantial challenges to address the issues at hand. We show that firms reduce earnings-based incentives in CEO compensation following ESG incidents, replacing earnings targets with nonfinancial and ESG-related metrics. These adjustments appear to work, as our findings demonstrate that, when firms reduce earnings-based incentives in CEO compensation after ESG incidents, shareholders are less unfavorable in say-on-pay voting, negative capital market sentiments decrease, and the risk of future ESG incidents decreases. Collectively, our results suggest that, by aligning CEO compensation design with optimal contracts, firms can navigate the storms of negative ESG events.

Our study also provides potentially fruitful avenues for future research. First, we show that incidents related to social and governance issues are more likely to trigger changes in CEO pay. This finding suggests that stakeholders' ESG objectives and power to influence corporate decisions vary. In future studies, scholars might investigate how stakeholders with incompatible objectives influence corporate ESG decisions. In addition, both performance targets and the form of compensation affect CEOs' behavior and decision-making. Designing CEO compensation packages to appropriately balance attention to short-term goals (through cash payouts) and long-term ones (through equity payouts) is another promising direction to explore. Finally, our study highlights that a firm's contracting environment changes after ESG incidents. In future research, scholars might investigate factors shaping firms' responses to intensified ESG concerns among stakeholders involved in different contracts.

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## Appendix A.
**How to measure the importance of earnings performance using Incentive Lab data?**

Step 1: Identify performance-based grants

We focus on performance-based awards granted to CEOs, which are paid to the CEO conditional on achieving a predetermined performance goal. To collect information on performance-based awards, we start with all firms covered by the ISS Incentive Lab database. First, we get the basic details on each grant in the Incentive Lab "GPBAGRANT" file, which contains information on the classification of the award, performance type (i.e., performance-vesting or time-vesting), vesting schedule, and target payout. We keep a sample of CEOs with at least one performance-vesting grant. Then we drop performance-vesting grants with only accelerated performance measures, which account for less than 1% of overall grants, as those grants are generally related to abnormal corporate activities. Furthermore, we drop grants with missing information on the award type and classify the performance-based awards as cash (non-equity) incentive plans, performance-vesting restricted shares, and performance-vesting stock options.

Step 2: Classify the attached performance measures

We then collect information on individual performance metrics used for each performance contingent award from two other Incentive Lab files "GPBAABS" and "GPBAREL", which include information on the metric type, vesting period, and weight associated with each absolute and relative performance metrics, respectively. As Incentive Lab expands the values of *metricType* after 2018, we modify the classification of Carter et al. (2022) accordingly. All performance measures are classified into four categories: 1) *Earnings-based metric*, including Earnings, EBIT, EBITDA, EBT, EPS, EVA, Operating Income, Profit Margin, ROA, ROE, ROI, Earnings/Profit-related, Economic Value and Financial/Investment return ratios. 2) *NonEarnings-based metric* including Cashflow, FFO, Other, Sales, Vague, Book Value, Balance Sheet-related, Cash Flow, and Revenue-related, 3) *Market-based metric* including Stock Price or Market-related, and 4) *Others_based metric* that includes nonfinancial information or ESG-related information, such as Business Unit, Cost Reduction, Debt Related, FDA Approval, IPO of Subsidiary, Individual, Operational, Same Store Sales, Activity-related, CSR, Environment, Liquidity/Solvency-related, Non-Financial, and Other and Social.

Step 3: Aggregate weights and target payouts on each category of performance measures

At the grant level, we use the percentage of the award that vests conditional on achieving the metric (Incentive Lab variable, *PercentVest*) as the weight attached to the performance metric. Following Carter et al. (2022), in the case of missing value on *PercentVest* or when the total percentage of all performance metrics under one grant does not sum up to 1, we replace the weight on each metric with equal weight. Then, we sum up the total weights based on the four categories of performance measures, and multiply the relative weights of earnings-based metric by the target payout of cash compensation (Incentive Lab variable *NonEquityTarget*) or the grant date fair value of equity compensation (Incentive Lab variable *EquityTarget*) to get the dollar amount the CEO will receive upon achieving earnings targets. We further drop grants with missing target payout or the reported target payout of less than $1,000.

Since there can be multiple grants under one CEO, we aggregate all grants to a single CEO for a given year. We sum up the target payouts of all grants based on each category of performance measures to define *Tgtpayout_Earnings*; a weighted average of the weights on earnings measures based on the magnitude of the target payout for each performance-based grant defines *Weight_Earnings*.

An example:

William R. Klesse, the CEO of VALERO ENERGY CORP (ticker: VLO), received three performance-based grants in 2013 as follows:

| N | Grant Type | *$Target Payout* | *$Tgtpayout Earnings Metrics* | *Weight Earnings Metrics* |
|---|---|---|---|---|
| 1 | Cash bonus | 2,250,000 | 375,000 | 0.167 |
| 2 | Option | 1,171,332 | 0 | 0 |
| 3 | RSUs | 1,147,715 | 0 | 0 |

The variable *Tgtpayout_Earnings* for the CEO in 2013 is the logarithm of one plus the sum of the target payout on achieving earnings goals from all performance-based awards: ln(1+ (375,000 + 0 +0)) = 12.835. The value of *Weight_Earnings* for the CEO in 2013 is the weighted average of the weights on earnings metrics: 0.082 (0.167 * 2,250,000 / (2,250,000 + 1,171,332 + 1,147,715) + 0 * 1,171,332 / (2,250,000 + 1,171,332+ 1,147,715) + 0 * 1,147,715 / (2,250,000 + 1,171,332+ 1,147,715)).

**Appendix B.**
**Variable definitions**

| Variables | Description | Data Source |
|---|---|---|
| **Compensation Variables** | | |
| *Tgtpayout_Earnings* | The logarithm of one plus the aggregate target payout from performance-based awards (including both non-equity and equity awards) based on earnings performance measures. The target payout for each performance contingent award is based on the Incentive Lab variable *NonEquityTarget* for non-equity plans, and *EquityTarget* for equity plans. We multiply the weight on *Earnings_based* measures by the target payout of each performance-based award to get the target payout on earnings measures for each award. Then sum up the target payout on earnings measures for all performance-based awards offered to a CEO during a fiscal year as the aggregate target payout on earnings measures. | Incentive Lab |
| *Weight_Earnings* | Aggregate weight on the performance metrics categorized as *Earnings based* in terms of performance-based awards. To be classified as *Earnings based* measures, the metric should be one of the following: Earnings, EBIT, EBITDA, EBT, EPS, EVA, Operating Income, Profit Margin, ROA, ROE, ROI, Earnings/Profit-related, Economic Value and Financial/Investment return ratios based on the Incentive Lab variable *metric* and *metricType,* following Carter et al. (2022). We first sum up the weight of *Earnings_based* metric at the individual grant level and then aggregate to the CEO level by value-weighted average based on the target payout of each grant. | Incentive Lab |
| *Tgtpayout_Total* | The logarithm of one plus the aggregate target payout from all performance-based awards. | Incentive Lab |
| *Tgtpayout_NonEarnings* | The logarithm of one plus the aggregate target payout from performance-based awards (including both non-equity and equity awards), based on non-earnings performance measures. To be classified as *NonEarnings_based* measures, the metric should be one of the following: Cashflow, FFO, Sales, Vague, Book Value, Balance Sheet-related, Cash Flow and Revenue-related based on the Incentive Lab variable *metric* and *metricType,* following Carter et al. (2022). | Incentive Lab |
| *Tgtpayout_Market* | The logarithm of one plus the aggregate target payout from performance-based awards (including both non-equity and equity awards), based on market performance measures. To be classified as *Market_based* measures, the metric should be one of the following: Stock Price or Market-related based on the Incentive Lab variable *metric* and *metricType,* following Carter et al. (2022). | Incentive Lab |
| *Tgtpayout_Others* | The logarithm of one plus the aggregate target payout from performance-based awards (including both non-equity and equity awards), based on other performance measures. To be classified as *Others_based* measures, the metric should be one of the followings: Business Unit, Cost Reduction, Debt Related, FDA Approval, IPO of Subsidiary, Individual, Operational, Same Store Sales, Activity-related, CSR, Environment, Liquidity/Solvency-related, Non-Financial, Other and Social based on the Incentive Lab variable *metric* and *metricType,* following Carter et al. (2022). | Incentive Lab |
| *ESG_Linked* | A dummy variable that takes the value of 1 if the CEO compensation in a firm is linked with ESG-related criterion. | Refinitiv |
| *Earnings_Down* | A dummy variable that takes the value of 1 if the change to *Tgtpayout Earnings in t+1 from t* (*Tgtpayout Earnings*$_{t+1}$ - | Incentive Lab |

| Variables | Description | Data Source |
|---|---|---|
| | *Tgtpayout_Earnings*$_t$) is in the bottom quartile of the sample in a given year. | |
| **ESG Incident Variables** | | |
| *ESG_Incident_Dummy* | A dummy variable that takes the value of 1 if a firm is exposed to at least one high-reach and novel incident by RepRisk in the current fiscal year. | RepRisk |
| *ESG_Incident_Dummy_Local* | The average number of ESG incidents in other local industries following Chen et al. (2015). | RepRisk |
| *E_Incident_Dummy* | A dummy variable that takes the value of 1 if a firm is exposed to at least one high-reach and novel incident by RepRisk that is one of the environmental-related issues in the current fiscal year. Based on RepRisk classification, environmental-related issues include global pollution and climate change, local pollution, impacts on ecosystems and landscapes, overuse and wasting of resources, waste issues, and animal mistreatment. | RepRisk |
| *S_Incident_Dummy* | A dummy variable that takes the value of 1 if a firm is exposed to at least one high-reach and novel incident by RepRisk that is one of the social-related issues in the current fiscal year. Based on RepRisk classification, social-related issues include human rights abuses, corporate complicity, impacts on communities, local participation issues, social discrimination, forced labor, child labor, freedom of association and collective bargaining, discrimination in employment, health and safety issues, and poor employment conditions. | RepRisk |
| *G_Incident_Dummy* | A dummy variable that takes the value of 1 if a firm is exposed to at least one high-reach and novel incident by RepRisk that is one of the governance-related issues in the current fiscal year. Based on RepRisk classification, governance-related issues include corruption, bribery, extortion, money laundering, executive compensation, misleading communication, e.g., greenwashing, fraud, tax evasion, and anti-competitive practices. | RepRisk |
| *Post_Y1* | A dummy variable that takes the value of 1 if a firm is exposed to at least one high-reach and novel incident by RepRisk in the current or previous fiscal year. | RepRisk |
| *Post_Y2* | A dummy variable that takes the value of 1 if a firm is exposed to at least one high-reach and novel incident by RepRisk in the current or previous two fiscal years. | RepRisk |
| *Post_Y3* | A dummy variable that takes the value of 1 if a firm is exposed to at least one high-reach and novel incident by RepRisk in the current or previous three fiscal years. | RepRisk |
| *Post* | A dummy variable that takes the value of 1 in the year of a firm exposed to the first-time high-reach and novel incident by RepRisk and all the subsequent years. | RepRisk |
| *Total_Coverage* | The logarithm of one plus the total number of ESG-related media coverage by RepRisk in the current fiscal year. | RepRisk |
| *E_Coverage* | The logarithm of one plus the total number of media coverage that is one of the environmental-related issues by RepRisk in the current fiscal year. | RepRisk |
| *S_Coverage* | The logarithm of one plus the total number of media coverage that is one of the social-related issues by RepRisk in the current fiscal year. | RepRisk |
| *G_Coverage* | The logarithm of one plus the total number of media coverage that is one of the governance-related issues by RepRisk in the current fiscal year. | RepRisk |
| *Avg_Incidents*$_{t+2}$ | The logarithm of one plus the average number of ESG-related incidents covered by RepRisk in the next two fiscal years. | RepRisk |

| Variables | Description | Data Source |
|---|---|---|
| **Control and Outcome Variables** | | |
| *Board Independence* | The percentage of independent directors out of the total number of directors on board. Independent director is identified using the role description *RoleName.* | BoardEx |
| *Board Size* | Number of directors on board. | BoardEx |
| *CEO Duality* | Dummy variable that takes the value of 1 if the CEO is also the chairman of the board, based on the role description *RoleName*. | BoardEx |
| *CEO Tenure* | Number of years a CEO in this role, using variable *TimeRole*. | BoardEx |
| *Dissent* | Dissent rate on shareholder Say-on-Pay voting, calculated as the sum of 'against' and 'abstain' votes divided by total votes. | ISS |
| *Firm Size* | The logarithm of one plus total asset using *ln(1+at).* | Compustat |
| *Leverage* | Firm total debt to total asset ratio using *(dlc+dltt)/at.* | Compustat |
| *Loss* | Following Carter et al. (2022), a dummy variable that takes the value of 1 if the firm reported losses in each of the previous two years based on *ib*. | Compustat |
| *Market-to-book* | The market value of equity to book value of equity ratio using *(csho*prcc_c)/ceq.* | Compustat |
| *ROA* | Firm earnings before interest and tax to asset ratio using *ib/at*. | Compustat |
| *Sales Growth* | The percentage change in firm total sales using $(sales_t/sales_{t-1})-1$. | Compustat |
| *Stock Return* | Firm annual stock return, calculated using monthly holding period returns where ordinary dividends are reinvested at month-end. | CRSP |
| *Strategy* | Firm investment policy based on capital intensity ratio using *ppent/at.* | Compustat |
| *Tobin's Q* | The ratio of the market value of assets to the book value of assets using *(at-ceq+csho*prcc_f)/at*. | Compustat |

**Table 1 Sample selection, sample distribution, and descriptive statistics**

Panel A: Sample selection procedure

| Selection Procedure | | N |
|---|---|---|
| All performance-based awards to CEOs with available performance measures data in Incentive Lab | | 45,335 |
| Minus: target payout is missing or smaller than 1,000 | -7,167 | 38,168 |
| Aggregate to CEO level | | 19,895 |
| Merge with RepRisk ESG incidents data (sample period: 2007 – 2021) | -5,186 | 14,709 |
| Minus: financial firms (SIC codes 6000–6999) | -3,105 | 11,604 |
| Minus: utility firms (SIC codes 4900–4999) | -2,110 | 9,494 |
| Minus: missing control variables from Compustat, CRSP and BoardEx | -1,565 | 7,929 |
| Final sample | | 7,929 |

Panel B: Sample distribution by year

| Year | N | Percentage |
|---|---|---|
| 2007 | 444 | 5.60% |
| 2008 | 454 | 5.73% |
| 2009 | 458 | 5.78% |
| 2010 | 490 | 6.18% |
| 2011 | 490 | 6.18% |
| 2012 | 524 | 6.61% |
| 2013 | 534 | 6.73% |
| 2014 | 551 | 6.95% |
| 2015 | 571 | 7.20% |
| 2016 | 541 | 6.82% |
| 2017 | 556 | 7.01% |
| 2018 | 576 | 7.26% |
| 2019 | 576 | 7.26% |
| 2020 | 589 | 7.43% |
| 2021 | 575 | 7.25% |
| Total | 7,929 | 100% |

Panel C: Sample distribution by industry

| Fama-French 12 Industry Classification | N | Percentage |
|---|---|---|
| Consumer non-durables – tobacco, textiles, apparel and toys | 629 | 7.93% |
| Consumer durables – cars, TV's, furniture, household appliances | 305 | 3.85% |
| Manufacturing – machinery, trucks, planes, paper | 1,383 | 17.44% |
| Oil, gas, and coal extraction and products | 514 | 6.48% |
| Chemicals and allied products | 435 | 5.49% |
| Business equipment – computers, software | 2,116 | 26.69% |
| Wholesale, retail, and some services | 341 | 4.30% |
| Healthcare, medical equipment, and drug | 900 | 11.35% |
| Other – mines, construction, transportations, hotels, entertainment | 1,306 | 16.47% |
| Total | 7,929 | 100% |

Panel D: Descriptive statistics

| Variables | N | Mean | SD | Q1 | Median | Q3 |
|---|---|---|---|---|---|---|
| *Tgtpayout_Earnings* | 7,929 | 12.840 | 4.138 | 12.830 | 14.000 | 14.940 |
| *Weight_Earnings* | 7,929 | 0.467 | 0.329 | 0.171 | 0.465 | 0.750 |
| *ESG_Incident_Dummy* | 7,929 | 0.126 | 0.332 | 0 | 0 | 0 |
| *Firm Size* | 7,929 | 8.552 | 1.380 | 7.650 | 8.479 | 9.423 |
| *Strategy* | 7,929 | 0.248 | 0.226 | 0.085 | 0.164 | 0.338 |
| *ROA* | 7,929 | 0.049 | 0.096 | 0.020 | 0.057 | 0.097 |
| *Loss* | 7,929 | 0.236 | 0.425 | 0 | 0 | 0 |
| *Sales Growth* | 7,929 | 0.089 | 0.239 | -0.015 | 0.061 | 0.157 |
| *Market-to-book* | 7,929 | 4.534 | 10.060 | 1.762 | 3.028 | 5.324 |
| *Leverage* | 7,929 | 0.289 | 0.203 | 0.148 | 0.268 | 0.400 |
| *Stock Return* | 7,929 | 0.162 | 0.426 | -0.087 | 0.122 | 0.349 |
| *Board Size* | 7,929 | 9.848 | 1.991 | 8 | 10 | 11 |
| *Board Independence* | 7,929 | 0.823 | 0.106 | 0.778 | 0.857 | 0.900 |
| *CEO Tenure* | 7,929 | 4.922 | 4.785 | 1.500 | 3.500 | 6.800 |
| *CEO Duality* | 7,929 | 0.447 | 0.497 | 0 | 0 | 1 |

*Notes*: This table reports the sample selection procedure, sample distributions, and descriptive statistics. Panel A describes the sample construction starting from the Incentive Lab database. Panel B shows sample distribution by year during the sample period of 2007 - 2021. Panel C shows the sample distribution by industry. Panel D displays the descriptive statistics of the variables used in the main regression analysis. N represents the CEO-firm-year observations. Percentage provides the number of observations out of the total sample size.

**Table 2 Regression results on the importance of earnings measures**

| Variables | *Tgtpayout_Earnings*$_{t+1}$ | *Weight_Earnings*$_{t+1}$ |
|---|---|---|
| | (1) | (2) |
| *ESG_Incident_Dummy* | -0.636*** | -0.051*** |
| | (-3.572) | (-3.390) |
| *Firm Size* | 0.706*** | 0.011 |
| | (7.761) | (1.382) |
| *Leverage* | 0.471 | 0.036 |
| | (1.068) | (0.858) |
| *Market-to-book* | -0.016*** | -0.001** |
| | (-2.744) | (-2.308) |
| *Loss* | -0.588*** | -0.059*** |
| | (-3.195) | (-4.080) |
| *Strategy* | -0.011 | 0.061 |
| | (-0.014) | (0.871) |
| *Sales Growth* | -1.835*** | -0.100*** |
| | (-5.238) | (-5.480) |
| *ROA* | 9.284*** | 0.430*** |
| | (7.753) | (6.429) |
| *Stock Return* | 0.078 | -0.004 |
| | (0.532) | (-0.429) |
| *CEO Duality* | 0.118 | 0.040** |
| | (0.669) | (2.426) |
| *CEO Tenure* | 0.009 | 0.004** |
| | (0.554) | (2.526) |
| *Board Size* | 0.140*** | 0.013*** |
| | (2.593) | (2.670) |
| *Board Independence* | 0.650 | -0.254*** |
| | (0.588) | (-2.832) |
| Industry FE | Yes | Yes |
| Year FE | Yes | Yes |
| Observations | 6,344 | 6,344 |
| R-squared | 0.300 | 0.214 |

*Notes:* This table reports empirical findings on the relationship between ESG Incidents and the importance of earnings measures in CEO compensation. Columns (1) and (2) display the baseline OLS regression results. Variable *ESG_Incident_Dummy* equals one if a firm is exposed to a high-reach and novel ESG incident in year *t*. All regressions are estimated with industry- and year-fixed effects included. The standard errors in all specifications are clustered by firm, and the robust *t* statistics are reported in parentheses. *, **, and ***, represent significance at the 10%, 5%, and 1% levels, respectively. All variable definitions are summarized in Appendix B.

**Table 3 Robustness tests: DID analyses**

Panel A: Two-way fixed effect DID analysis

| Variables | *Tgtpayout_Earnings* | | | *Weight_Earnings* | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| *Post_Y1* | -0.279** | | | -0.030*** | | |
| | (-1.965) | | | (-3.089) | | |
| *Post_Y2* | | -0.322** | | | -0.027** | |
| | | (-2.268) | | | (-2.423) | |
| *Post_Y3* | | | -0.339** | | | -0.031*** |
| | | | (-2.354) | | | (-2.613) |
| Control Variables | Yes | Yes | Yes | Yes | Yes | Yes |
| Firm FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 7,929 | 7,929 | 7,929 | 7,929 | 7,929 | 7,929 |
| R-squared | 0.657 | 0.657 | 0.657 | 0.625 | 0.625 | 0.626 |

Panel B: Staggered PSM-DID analysis on the first-time ESG incident

| Variables | *Tgtpayout_Earnings* | *Weight_Earnings* | *Tgtpayout_Earnings* | *Weight_Earnings* |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| *Post* | -0.371** | -0.037** | | |
| | (-2.008) | (-2.229) | | |
| *Before(-2)* | | | 0.255 | -0.006 |
| | | | (1.312) | (-0.365) |
| *Before(-1)* | | | 0.163 | -0.023 |
| | | | (0.741) | (-1.393) |
| *Current* | | | -0.007 | -0.040** |
| | | | (-0.037) | (-2.520) |
| *After(+1)* | | | -0.292 | -0.042*** |
| | | | (-1.190) | (-2.628) |
| *After(+2)* | | | -0.534** | -0.030* |
| | | | (-1.972) | (-1.855) |
| *After(+3)* | | | -0.334* | -0.044*** |
| | | | (-1.728) | (-3.096) |
| Control Variables | Yes | Yes | Yes | Yes |
| Firm FE | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes |
| Observations | 6,580 | 6,580 | 6,580 | 6,580 |
| R-squared | 0.674 | 0.634 | 0.675 | 0.635 |

Panel C: Stacked DID analysis on the first-time ESG incident

| Variables | Stacked DID | | Stacked DID after PSM | |
|---|---|---|---|---|
| | *Tgtpayout_Earnings* | *Weight_Earnings* | *Tgtpayout_Earnings* | *Weight_Earnings* |
| | (1) | (2) | (3) | (4) |
| *Post* | -0.291* | -0.029* | -0.386** | -0.038** |
| | (-1.649) | (-1.867) | (-2.146) | (-2.331) |
| Control Variables | Yes | Yes | Yes | Yes |
| Cohort*Firm FE | Yes | Yes | Yes | Yes |
| Cohort*Year FE | Yes | Yes | Yes | Yes |
| Observations | 63,324 | 63,324 | 34,528 | 34,528 |
| R-squared | 0.726 | 0.650 | 0.721 | 0.672 |

*Notes*: This table reports the regression results of DID analyses. Panel A shows the result of the two-way fixed effect DID regression using all the ESG incident events. Variable *Post_Y1* takes the value of one if a firm experiences at least one high-reach and novel ESG incident in the current year or the previous year. Variables *Post_Y2* and *Post_Y3* are constructed accordingly. Panel B presents the staggered PSM-DID regression results on the first-time ESG incident after PSM on firm characteristics and the parallel trend tests. Variable *Post* takes the value of one in the year of the first-time ESG incident and all subsequent years, and zero otherwise. Panel D reports the results of stacked DID regressions. Two-way fixed-effect DID and staggered PSM-DID regressions are estimated with the firm- and year-fixed effects included while stacked DID regressions are estimated with cohort*firm- and cohort*year-fixed effects. The standard errors in all specifications are clustered by firm, and the robust *t* statistics are reported in parentheses. *, **, and ***, represent significance at the 10%, 5%, and 1% levels, respectively. All variable definitions are summarized in Appendix B.

**Table 4 Other robustness tests**

Panel A: Regression results after entropy balancing on three moments

| Variables | *Tgtpayout_Earnings*$_{t+1}$ | *Weight_Earnings*$_{t+1}$ |
|---|---|---|
| | (1) | (2) |
| *ESG_Incident_Dummy* | -0.381** | -0.033** |
| | (-2.181) | (-2.211) |
| Control Variables | Yes | Yes |
| Industry FE | Yes | Yes |
| Year FE | Yes | Yes |
| Observations | 6,344 | 6,344 |
| R-squared | 0.224 | 0.224 |

Panel B: Regression results using instrumental variable

| Variables | First Stage (Probit) | Second Stage | |
|---|---|---|---|
| | *ESG_Incident_Dummy* | *Tgtpayout_Earnings*$_{t+1}$ | *Weight_Earnings*$_{t+1}$ |
| | (1) | (2) | (3) |
| *ESG_Incident_Dummy_Local* | 3.465*** | | |
| | (2.623) | | |
| *Fitted_ESG_Incident_Dummy* | | -3.977** | -0.241* |
| | | (-2.368) | (-1.822) |
| Control Variables | Yes | Yes | Yes |
| Industry FE | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes |
| Observations | 5,947 | 5,947 | 5,947 |
| (pseudo) R-squared | 0.256 | 0.300 | 0.206 |

*Notes*: This table shows the empirical results of other robustness tests. Panel A summarizes the results by applying an entropy-balancing approach, and Panel B summarizes the results using an instrumental variable approach. All regressions are estimated with industry- and year-fixed effects included. The standard errors in all specifications are clustered by firm, and the robust *t* statistics are reported in parentheses. *, **, and ***, represent significance at the 10%, 5%, and 1% levels, respectively. All variable definitions are summarized in Appendix B.

**Table 5 Additional tests: When do firms have stronger incentives to react?**

Panel A: Different effects of E-S-G

| Variables | *Tgtpayout_Earnings*$_{t+1}$ | *Weight_Earnings*$_{t+1}$ |
|---|---|---|
| | (1) | (2) |
| *E_Incident_Dummy* | -0.419 | 0.027 |
| | (-1.001) | (0.996) |
| *S_Incident_Dummy* | -0.428** | -0.051*** |
| | (-2.008) | (-2.860) |
| *G_Incident_Dummy* | -0.556*** | -0.039** |
| | (-2.613) | (-2.081) |
| Control Variables | Yes | Yes |
| Industry FE | Yes | Yes |
| Year FE | Yes | Yes |
| Observations | 6,344 | 6,344 |
| R-squared | 0.300 | 0.214 |

Panel B: Consumer-sensitive industries

| Variables | Highly Consumer-sensitive | | Less Consumer-sensitive | |
|---|---|---|---|---|
| | *Tgtpayout_Earnings*$_{t+1}$ | *Weight_Earnings*$_{t+1}$ | *Tgtpayout_Earnings*$_{t+1}$ | *Weight_Earnings*$_{t+1}$ |
| | (1) | (2) | (3) | (4) |
| Hanlon and Slemrod (2009) | | | | |
| *ESG_Incident_Dummy* | -0.127 | -0.036 | -0.759*** | -0.044** |
| | (-0.425) | (-1.636) | (-3.319) | (-2.404) |
| Control Variables | Yes | Yes | Yes | Yes |
| Industry FE | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes |
| Observations | 1,242 | 1,242 | 5,102 | 5,102 |
| R-squared | 0.352 | 0.320 | 0.311 | 0.222 |
| Burke et al. (2019) | | | | |
| *ESG_Incident_Dummy* | 0.194 | -0.023 | -0.775*** | -0.055*** |
| | (0.694) | (-0.814) | (-3.708) | (-3.102) |
| Control Variables | Yes | Yes | Yes | Yes |
| Industry FE | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes |
| Observations | 1,166 | 1,166 | 5,178 | 5,178 |
| R-squared | 0.586 | 0.284 | 0.251 | 0.219 |

*Notes*: This table presents empirical results on when firms have stronger incentives to react to ESG incidents by reducing the importance of earnings measures in CEO compensation. Panel A reports results on the different effects of E, S, and G-related incidents on earnings-based incentives in CEO compensation; Panel B shows results of subsample analysis on a firm's customer orientation. All regressions are estimated with industry- and year-fixed effects included. The standard errors in all specifications are clustered by firm, and the robust *t* statistics are reported in parentheses. *, **, and ***, represent significance at the 10%, 5%, and 1% levels, respectively. All variable definitions are summarized in Appendix B.

## Table 6 Additional tests: Other compensation design choices

Panel A: Use of other performance measures

| Variables | *Tgtpayout_Total*$_{t+1}$ | *Tgtpayout_NonEarnings*$_{t+1}$ | *Tgtpayout_Market*$_{t+1}$ | *Tgtpayout_Others*$_{t+1}$ | *ESG_Linked*$_{t+1}$ |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| *ESG_Incident_Dummy* | 0.023 | 0.222 | 0.674** | 0.805** | 0.774*** |
| | (0.581) | (0.755) | (2.342) | (2.351) | (2.692) |
| Control Variables | Yes | Yes | Yes | Yes | Yes |
| Industry FE | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes |
| Observations | 6,344 | 6,344 | 6,344 | 6,344 | 4,502 |
| R-squared | 0.483 | 0.173 | 0.097 | 0.112 | |
| Wald chi2 | | | | | 219.270 |

Panel B: Non-equity payout vs. equity payout

| Variables | Non-equity | | Equity | |
|---|---|---|---|---|
| | *Tgtpayout_Earnings*$_{t+1}$ | *Weight_Earnings*$_{t+1}$ | *Tgtpayout_Earnings*$_{t+1}$ | *Weight_Earnings*$_{t+1}$ |
| | (1) | (2) | (3) | (4) |
| *ESG_Incident_Dummy* | -0.859*** | -0.061*** | -0.479 | -0.067*** |
| | (-4.207) | (-4.055) | (-1.291) | (-3.077) |
| Control Variables | Yes | Yes | Yes | Yes |
| Industry FE | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes |
| Observations | 6,010 | 6,010 | 4,198 | 4,198 |
| R-squared | 0.268 | 0.245 | 0.188 | 0.149 |

*Notes*: This table reports empirical results on other elements in CEO compensation design choices following ESG incidents. Panel A reports results on the adjustment to the structure of performance measures in CEO compensation following ESG incidents. Panel B reports results within subsample of nonequity payout vs. equity payout. All regressions are estimated with industry- and year-fixed effects included. The standard errors in all specifications are clustered by firm, and the robust *t* statistics are reported in parentheses. *, **, and ***, represent significance at the 10%, 5%, and 1% levels, respectively. All variable definitions are summarized in Appendix B.

## Table 7 Additional tests: ESG incidents and shareholder value

Panel A: Future ESG incidents

| Variables | $Total\_Coverage_{t+1}$ | $E\_Coverage_{t+1}$ | $S\_Coverage_{t+1}$ | $G\_Coverage_{t+1}$ |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| *Tgtpayout_Earnings* | 0.013*** | 0.007** | 0.006** | 0.006** |
| | (3.503) | (2.386) | (2.074) | (2.229) |
| Control Variables | Yes | Yes | Yes | Yes |
| Industry FE | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes |
| Observations | 7,929 | 7,929 | 7,929 | 7,929 |
| R-squared | 0.619 | 0.555 | 0.567 | 0.559 |

Panel B: Shareholder value and future performance

| Variables | $\Delta Tobin's\ Q_{t+1}$ | $\Delta Dissent_{t+1}$ | $Avg\_Incidents_{t+2}$ |
|---|---|---|---|
| | (1) | (2) | (3) |
| *Earnings_Down* × *ESG_Incident_Dummy* | 0.100** | -0.036** | -0.137** |
| | (1.977) | (-2.006) | (-2.010) |
| *Earnings_Down* | -0.044** | 0.013** | 0.017 |
| | (-2.255) | (2.252) | (0.970) |
| *ESG_Incident_Dummy* | -0.057* | 0.004 | 0.720*** |
| | (-1.818) | (0.518) | (11.940) |
| Control Variables | Yes | Yes | Yes |
| Industry FE | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes |
| Observations | 6,336 | 4,088 | 6,338 |
| R-squared | 0.112 | 0.036 | 0.665 |

*Notes*: This table provides empirical results on future ESG incidents and shareholder value. Panel A summarizes the empirical evidence on the assumption of CEO short-termism and ESG incidents. Panel B summarizes the empirical results on the moderating effects of CEO compensation design and future firm-level outcomes. All regressions are estimated with industry- and year-fixed effects included. The standard errors in all specifications are clustered by firm, and the robust *t* statistics are reported in parentheses. *, **, and ***, represent significance at the 10%, 5%, and 1% levels, respectively. All variable definitions are summarized in Appendix B.